National Institute of Environmental Health Sciences

Can economic, land use and climatic stresses lead to famine, disease, warfare and death? Using Europe's calamitous 14th century as a parable for the modern age

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Abstract:

Although many of today's ecological, climatic and socio-economic problems seem unprecedented, similar events have occurred in the past. As such, historic periods of climatic and economic volatility can be used as a way of developing frameworks for analyzing today's predicament. Western Europe's "middle ages" (circa 11-14th century) may be one such case. By the 12th century, medieval Europe had shifted from the subsistence agrarian economy that emerged following the collapse of the Roman Empire to one where spatially dispersed trade in agricultural commodities helped support a complex society that devoted considerable resources to cultural works. This shift was facilitated by new institutional arrangements centred on monastic orders that provided access to both new agricultural and food processing technologies as well as trade routes. These institutional arrangements contributed to population growth and land clearing. All of these factors increased the wealth of society but also concentrated this wealth in a small number of communities that were dependent on an ever-increasing and exploited hinterland for resources. Ultimately, this created a tightly coupled continent-wide subsistence system that was vulnerable to the weather, economic and disease shocks of the 14th century when Europe's population declined by perhaps 50%. In exploring this history, the goal of this paper is to draw on a diverse theoretical body of literature (that includes resiliency theory, landscape ecology, political science and ecological economics) to develop a series of hypotheses about how large-scale complex civilizations can become vulnerable to climate change.

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Resource Description

Exposure :

weather or climate related pathway by which climate change affects health

Ecosystem Changes, Human Conflict/Displacement, Temperature

Temperature: Fluctuations

Geographic Feature:

resource focuses on specific type of geography

None or Unspecified

Geographic Location: ☑

resource focuses on specific location

Non-United States

Non-United States: Europe

Health Co-Benefit/Co-Harm (Family Planning/Population Reduction): ☑

specification of beneficial or harmful impacts to health resulting from efforts to promote family planning or reduce population growth as a climate change adaptation or mitigation measure

A focus of content

Health Impact: ☑

specification of health effect or disease related to climate change exposure

Morbidity/Mortality

Resource Type: ☑

format or standard characteristic of resource

Research Article, Review

Timescale: ☑

time period studied

Time Scale Unspecified